

**NEW SET OF CLAIMS TO FILE AS A PRELIMINARY AMENDMENT (NEW
CLAIMS 9 AND 10)**

- 5 1. Apparatus for transmitting a signal through an optical
data transmission network, the apparatus comprising a
pulse emitter and at least one line fiber for conveying
at least one pulse in said line fiber, wherein the
apparatus comprises a spreader module for linearly
10 spreading pulses, said spreader module comprising a
propagation medium that is dispersive and linear, said
propagation medium presenting accumulated chromatic
dispersion that is high enough to lower the peak power of
the pulse to below a predetermined threshold, where a
15 signal above said threshold is liable to be subjected to
non-linear distortion in the line fiber, said spreader
module being disposed between the emitter and the line
fiber.
- 20 2. Transmission apparatus according to claim 1, wherein
the spreader module comprises a fiber of the HOM type, of
the SLA type, or having photonic crystals.
- 25 3. Transmission apparatus according to claim 1, wherein
it includes a plurality of amplifier modules disposed
regularly along the line fiber, each including a
dispersion compensation module comprising a propagation
medium that is dispersive and linear.
- 30 4. Transmission apparatus according to claim 3, wherein
the dispersion compensation module comprises a fiber of
the HOM type, the SLA type, or having photonic crystals.
- 35 5. The use of apparatus according to claim 1, for an
optical network having a data rate of not less than
160 Gbit/s.

6. A method of transmitting a signal through an optical data transmission network, the method comprising the steps consisting in emitting at least one pulse and in conveying said pulse via an optical data transmission network comprising at least one line fiber, wherein the method further comprises, prior to conveying the pulse to the line fiber, a step consisting in causing the pulse to be conveyed by a propagation medium that is dispersive and linear, said propagation medium presenting accumulated chromatic dispersion that is high enough to lower the peak power of the pulse to below a predetermined threshold, where a signal above said threshold is liable to be subjected to non-linear distortion in the line fiber.

7. A transmission method according to claim 6, wherein for a transmitted pulse that is amplified by amplifier modules disposed regularly along the line fiber, the pulse is conveyed within the amplifier modules in a propagation medium that is dispersive and linear in order to compensate the dispersion to which the pulse has been subjected in the line fiber.

8. The use of a method according to claim 6, wherein for optical transmission at a data rate of not less than 160 Gbit/s.

9. The use of a module comprising a propagation medium that is dispersive and linear, between a pulse emitter and a line fiber, in order to transmit pulses into the line and to spread pulses linearly, with the accumulated chromatic dispersion of said module being high enough to lower the peak power of pulses to below a predetermined threshold, above which the signal is liable to be subjected to distortion.

10. The use of an amplifier module in a line fiber for transmitting pulses into the line, said amplifier module comprising pulse amplifier means and a compensation module comprising a propagation medium that is dispersive
5 and linear in order to increase the peak power and reduce the width of the pulses.